

THE BUTTERFLIES OF SIKKIM¹

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Sikkim, a small state to the north of West Bengal, lies between 27° 5' and 28° 10' N and 87° 59' and 88° 56' E and comprises an area of 750 sq. km. Due to altitudinal variations and climatic conditions the area has an abundant variety of flora and fauna. This region has been explored by Salim Ali (1952-53), Hooker (1856) and De Niceville (1880-83) and during the late 19th and early 20th centuries. There are hardly any reports on the natural history of Sikkim in recent years. Many changes have taken place due to increased human population, deforestation, and other human activities. Hence we undertook the study of the present status of its flora and fauna.

The study was carried out in West and North Sikkim. The following areas were visited: In W. Sikkim we trekked from Geyzing to Dzongri via Yoksum and returned to Legship via Tashiding. The route followed was Geyzing (1500 m) — Pamayangtse (1800 m) — Pelling (1800 m) — Yoksum (2200 m) — Bakkhim (2800 m) — Dzongri (4000 m) — Kaburlake (4500 m) — Yoksum (2200 m) — Tashiding (1800 m) — Legship (1200 m). In N. Sikkim, keeping Singhik as base camp, the surrounding regions were visited and explored: Singhik (1200 m), Mangan (1200 m), Ryngym (1370 m), Sankalang (900 m), Pashingdang (950 m), Tholung bridge (950 m), Manul

(1200 m), Nanga Bridge (1220 m) and Ryngbum Bridge (950 m). Gangtok (1800 m), the capital of Sikkim was also visited. Observations, whenever possible, were also made while travelling. A total distance of about 170 km was trekked in about 25 days.

GENERAL OBSERVATIONS

In W. Sikkim, the variation of flora could be observed as we reached higher altitudes. The region around Geyzing, Pelling, Yoksum, Tashiding and Legship was largely under cultivation except for a few pockets of forests. Mostly paddy and buckwheat were being cultivated. Secondary growth was quite abundant in this region which mainly consisted of nettles, *Polygonum*, *Eupatorium* *Impatiens*, *Gynura*, *Ageratum*, ferns etc. Wild Chestnuts ('Kotus'), *Alnus*, *Ficus* spp., Himalayan cherry, *Mahonia acanthifolia* and bamboos were common in the forested areas. Yoksum to Bakkhim route was through dense evergreen and semi-evergreen forests. *Magnolia* spp., *Michelia* spp., rhododendrons, oak, maple and bamboos were the predominant plants. Nettles, ferns, *Arisema* spp., *Begonia* spp. and *Impatiens* formed secondary growth. Beyond 3500 m rhododendrons, junipers and azaleas were seen.

In N. Sikkim, due to human settlement, the forests were thin but secondary growth was abundant. *Alnus*, Wild Chestnut, fig, *Eugenia*, *Macaranga* and *Erythrina* were most predominant in this region. Secondary growth consisted of *Polygonum*, *Clerodendron*, *Artemesia*, *Piper*, *Ageratum*, *Fagopyrum*, ferns, bamboos and wild bananas. There were a few patches of cardamom plantations.

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The present paper is the result of three short visits to Sikkim by us (MH and NDM). The area was visited in November, 1980 by Meena Haribal, Ulhas Rane, M. R. Almeida, Manek Mistry, Usha Ganguli and Arati Kaikini and by N. D. Mulla and others in November, 1981 and May, 1982.

Observations were made during daytime and mostly up to 15 m distance. Identification was carried out with the help of three standard books (Wynter-Blyth 1951, Talbot 1934 Vols. I & II, Evans 1932) and also by comparing the specimens collected with the specimens in the BNHS collection. About 80 specimens, belonging to 50 species, were collected during the study and are deposited with BNHS.

A larger number of butterflies were seen in November than in May at elevations between 400 m and 2200 m. Tashiding-Legship and Singhik regions were abundant in butterflies (both species-wise and in the number of individuals seen). N. Sikkim has a larger number of butterflies than W. Sikkim.

Some species like the Great Mormons were not encountered in May, even though they were common in November, but the Tawny Costers were seen locally in large numbers only in May. Red Lacewings and Tabby's were very common in Singhik region during November, 1980 but were not sighted by NDM even once in November, 1981. None of the butterflies of the family Amathusidae were seen and only a few species of Papilionidae though quite a few beautiful species like windmills etc. were not seen although they are supposed to be very common during May (Talbot 1947).

Key to notations used in the text for status
 VC — very common (20-30 specimens seen)
 C — Common (upto 20 specimens seen)
 NC — Not common (10 specimens seen)
 LC — Locally common (5 specimens seen only at one place)
 S — Single or two specimens encountered.

Order: LEPIDOPTERA
 Fam. DANAIDAE

1. **Danaus sita sita** (Kollar). Chestnut Tiger; VC.

One of the common butterflies in both W. & N. Sikkim; seen upto 2500 m, mostly in open country near human habitation, often seen feeding on Himalayan Cherry flowers and on moist earth. Seen flying up to 10-30 m above the ground.

2. **Danaus hamata** (Mcleay). Dark Blue Tiger; S.

Two dead specimens were collected — one near a stream at Tashiding and the other entangled on a spider web between Sangkalang and Pashing-dang.

3. **Danaus genutia** (Cramer). Common Tiger; LC.

Seen only at low altitudes near paddy fields in summer at Legship.

4. **Danaus chrysippus** (Linnaeus). Plain tiger; S.

A single butterfly seen flying across the road in Gangtok in November.

5. **Euploea mulciber** (Cramer). Striped Blue Crow; LC.

Seen basking by the roadside at low altitudes in W. Sikkim around Tashiding and Legship.

6. **Euploea klugi** (Housefield & Moore). Blue Crow; S.

Seen feeding on flowers of Compositae at Manul.

7. **Euploea diocletianus** (Fabricius). Magpie Crow, S.

Two butterflies were seen flying above tree level close to each other near Tashiding monastery in a forested patch.

Fam. SATYRIDAE

8. **Mycalesis perseus** (Fabricius). Common Bush Brown; C.

Bush Browns were very common in Mangan, Manul and Sangkalang areas of N. Sikkim. There were also other bush browns, both of dry and wet season forms. Dry season forms were seen in cultivated areas while wet season forms were seen in forested areas of Mangan.

9. **Lethe confusa** Aurivillius. Banded Tree Brown; C.

A common butterfly seen upto 2200 m, abundant at lower elevations; shows strong territorial behaviour; when disturbed flies close to the ground for a short distance. One butterfly observed (MH) had occupied an area of about 10×2 sq.m. along the path with nettles. It had three definite perches, of which two were used more often, sitting with wings closed or half open, when disturbed from a perch, it settled on another and from there back to the first; only twice out of 7-8 times did it settle on a third perch. When another male of the same species approached this patch, it was immediately chased away.

This butterfly can be easily confused with the Straight Banded Tree Browns and Dark Judy but can be distinguished by white patches near the apex.

One was seen feeding from a vessel containing few cooked rice grains.

10. **Lethe insana** (Kollar). Common Forester; S.

One specimen collected from near Sankalang bridge during November.

11. **Lethe sinorix** (Hewitson). Tailed Red Forester; NC.

Seen only in N. Sikkim. Usually near Sangkalang bridge sitting on dry grassy patches on mud banks along the road in cultivated patches.

12. **Lethe verma** (Kollar). Straight Banded Tree Brown; S.

Spotted two specimens — one near Bakkhim, feeding on moist earth, and the other near Pashingdang which was collected.

13. **Lethe siderea** Marshall. Scarce Wood Brown; S.

Only one specimen was observed near a stream between Bakkhim and Yoksum.

14. **Lethe sidonis** (Hewitson). Common Wood Brown; NC.

Encountered only in W. Sikkim between 1800 m - 3050 m, usually on moist earth.

15. **Lethe baladeva** (Moore). Treble Silver-stripe.

Two specimens seen — one at Gangtok on a *Eupatorium* leaf, the other near Mangan.

16. **Orinoma damaria** Gray. Tiger Brown; S. One specimen was caught in Singhik.

17. **Aulocera saraswati** (Kollar). Striated Satyr; S.

A single butterfly seen in the evening near Ryngym monastery above Mangan on moist earth. When disturbed it flew into the valley below.

18. **Ypthima baldus** (Fabricius). Common Five-ring; LC.

Locally common in cardamom plantations at Mangan, often seen basking in the sun till late afternoon.

19. **Ypthima sakra** Moore. Himalayan Five-ring; VC.

One of the most common butterflies, seen up to 2500 m; very restless, shows strong territorial behaviour, chases away members of its own species, often seen basking in the early mornings. Feeds on nectar of *Anaphalis* sp.

20. *Melanitis leda ismene* (Cramer). Common Evening Brown; LC.

Locally common in thick wooded areas of Gangtok. One specimen was seen at Singtam. It was very common in the orchid sanctuary at Gangtok.

21. *Melanitis zitenius* (Herbst). Great Evening Brown; LC.

Two specimens were seen (wet season form) at the orchid sanctuary on dry leaves.

22. *Elymnias malelas* (Hewitson) Spotted Palmfly; S.

A pair was seen near Tashiding monastery, chasing each other. They often settled on a banana leaf which is the food plant for the larvae of these butterflies; they may have been a courting pair.

23. *Elymnias nesaea* (Linnaeus). Tiger Palmfly; S.

One specimen was caught in the jeep radiator while it was crossing the road during the drive from Rangpo to Singtam.

Fam. NYMPHALIDAE

24. *Eriboea athamas* (Drury). Common Nawab; S.

A single specimen was seen at Rangpo, feeding on flowers.

25. *Eriboea arja* (Felder). Pallid Nawab; NC.

One seen near Sangkalang bridge feeding on moist earth, and another at Ryngbum bridge on the banks of the Teesta. Also one near Gangtok.

26. *Apatura parisatis* Westwood. Black Prince; LC.

Locally common near Manul power station. Ryngbum bridge & Sangkalang. One of our

team members licked his fingers after eating a piece of cake and this butterfly settled on the finger to feed on the saliva. This butterfly seemed to be very bold.

27. *Sephisa chandra* (Moore). Eastern Courtier; S.

Two males were caught in Sangkalang area.

28. *Hestina nama* (Doubleday). Circe; NC.

Caught three specimens from Manul and Singhik region. NDM & party found it to be very common in both W. & N. Sikkim.

29. *Stibochiona nicea* (Grey). Popinjay; VC.

Noted as one of the commonest butterflies in cardamom plantations at Mangan and Pashingdang, this was not seen in W. Sikkim by MMH, but NDM saw several at Legship in November. They are very wary when approached, flying as far as 20 to 30 m. They fly close to the ground (3-5 m), seen basking in the mornings on cardamom leaves, with wings partially or fully open.

30. *Euthalia julii* (Bougainville). Common Earl; VC.

One of the common butterflies in cardamom plantations of N. Sikkim, particularly Mangan and Pashingdang areas, in November. Only males were seen by MMH. NDM saw both sexes at Legship and Gangtok. They often sit with wings fully or partially open and show strong territorial behaviour.

31. *Euthalia garuda* (Moore). Common Baron; LC.

Only one male was seen near Pashingdang by MMH. Common in Singtam, feeding on fruits in the bazar (NDM).

32. *Limenitis procris* (Cramer). Commander; LC.

Locally common in Mangan and Manul

areas, often seen basking in the sun; they are very wary on closer approach and feed on marigold and Poinsettia flowers.

33. **Pantoporia selenophora** (Kollar). Staff sergeant; LC.

Locally common near Tholung bridge. Eight males were seen on a dry stream bed; all seemed to have freshly emerged.

34. **Pantoporia zeroa** (Moore). Small Staff Sergeant; LC.

Locally common at Tholung Bridge. Four males seen basking in the early morning sun.

35. **Pantoporia opalina** (Kollar). Himalayan Sergeant; NC.

Seen near Tashiding monastery and Mangan up to 2000 m., feeding on flowers of *Mentha* spp. One of the specimens was very badly tattered.

36. **Pantoporia perius** (Linnaeus). Common Sergeant; S.

One badly tattered specimen was seen on the road at Mangan.

37. **Neptis mahendra** (Moore). Himalayan Sailer; C.

Common upto 2000 m. in both W. & N. Sikkim, seen feeding on *Anaphalis* spp. & marigold flowers.

38. **Neptis hylas** (Moore). Common Sailer; NC.

Seen at Gangtok, but not as frequently as *N. mahendra*, seen feeding on *Anaphalis* spp. and *Cestrum* spp. flowers.

39. **Neptis soma** (Moore): Sullied Sailer; S.

A single specimen was seen at Gangtok, feeding on *Anaphalis* flowers.

40. **Neptis ananta** (Moore). Yellow Sailer.

A single specimen was seen basking at Manul.

41. **Neptis viraja** (Moore). Yellow Jack Sailer; S.

Two specimens seen in Mangan area.

42. **Neptis hordonia** (Stoll) Common Lascar; S.

A mating pair was observed late in the evening sitting on a creeper by the roadside.

43. **Cyrestis thyodamas** Boisduval. Common map; S.

A single specimen was seen sitting on a bamboo plant near Ryngym monastery above Magan. It often flew down to the ground and went back to the same perch.

44. **Pseudergolis wedah** (Kollar). Tabby; LC.

Locally common between Manul and Nanga bridge along the road, particularly common at Nanga bridge where 10-12 butterflies were seen on the road, sitting with their wings open. Not seen by NDM.

45. **Hypolimans missipus** (Linnaeus). Danaid Eggfly; S.

A single specimen was seen near Tashiding monastery.

46. **Doleschallia bisaltide** (Cramer). Autumn Leaf; S.

One specimen collected while sitting on the mud bank near Sangkalang bridge.

47. **Kallima inachus** (Boisduval). Orange Oak-leaf; S.

Two specimens were seen, one at Sangkalang bridge, the other near Manul.

48. **Precis hierta** (Fabricius). Yellow pansy; NC.

Seen at several places, mostly in open grassy patches near villages and towns.

49. **Precis orithyia** (Linnaeus). Blue Pansy; C.
Common on grassy patches at Gangtok, Tashiding and Ryngym monastery.
50. **Precis almana** (Linnaeus). Peacock Pansy; NC.
Collected a very tattered specimen from Sangkalang. Several others were seen by NDM around Tashiding.
51. **Precis lemonias** (Linnaeus). Lemon Pansy; S.
A single specimen was collected from Tashiding.
52. **Premis iphita** (Cramer). Chocolate Pansy; LC.
Locally common near Ryngbum bridge, seen feeding on Compositae flowers.
53. **Vanessa indica** (Herbst). Indian Red Admiral; C.
Common up to 2200 m. in most of the places. Mostly seen on grassy patches sitting with wings open. This butterfly was once seen being chased by an Indian Tortoise Shell.
54. **Aglais (Vanessa) cashmirensis** (Kollar). Indian Tortoise Shell; VC.
Very common in W. Sikkim, from 950 m. to 3500 m. but less common in N. Sikkim. It has the largest altitudinal range; specimens were seen even in the snow at Dzongri. Seen feeding on *Anaphalis* spp., poinsettia and buckwheat flowers. Often sits with wings open shows strong territorial behaviour and is an aggressive butterfly. It once attacked a Common Silverstripe, Common Jester, Red admiral and a bee in about 20-25 minutes, outside Tashiding monastery.
55. **Symbrenthia hippoclus** de Niceville. Common Jester; VC.
Very common up to 2500 m., often basking in the sun. Habits were very similar to those of the sailers.
56. **Symbrenthia hypselis** (Godart). Himalayan Jester; NC.
Two specimens were collected, one from orchid sanctuary late in the evening, the other from Nanga bridge. Several others were photographed by NDM near Yoksum.
57. **Argynnis hyperbius** (Johanssen). Indian Fritillary; C.
Seen in both N. & W. Sikkim up to 2000 m. Males were more common, seen feeding on marigold and *Gynura* flowers and also observed sitting on nettles.
58. **Argynnis childerni** Gray. Large Silver-stripe; NC.
Only four specimens were observed in W. Sikkim up to Yoksum (2200 m.). Feeds on *Gynura* and marigold flowers.
59. **Fabriciana kamala** Moore. Eastern Silver-stripe; S.
A single specimen was encountered at Geyzing, feeding on *Gynura* flowers.
60. **Issoria lathonia** (Linnaeus). Queen of Spain Fritillary; NC.
Seen only in W. Sikkim up to 3000 m., but not common. Feeds on buckwheat flowers & *Anaphalis* flowers.
61. **Cirrochroa aoris** Doubleday. Large Yeoman; S.
A single dead specimen was collected from Mangan and a wary live specimen was seen at Tashiding.
62. **Cethosia biblis** (Drury). Red Lacewing; C.
One of the common butterflies seen up to 2000 m., but more common between 900 m-

1500 m, seen feeding on *Anaphalis*, polygonum and some Compositae flowers, also on dry human faeces. Usually shy, it does not go very far when disturbed and sits with wings closed.

Fam. ACRAEIDAE

63. **Acraea issoria** (Hubner). Yellow Coster; LC.

Common in N. and W. Sikkim. Both sexes seen feeding on moist earth and *Anaphalis* flowers. A congregation of about 50 butterflies was seen around a bush near Tarku and at Geyzing.

64. **Acraea violaea** (Fabricius). Tawny Coster; LC.

Observed on the way from Tashiding to Legship about 100 specimens were feeding on a flowering plant in May by NDM.

Fam. ERYCINIDAE

65. **Zemerus flegyas** Cramer — Punchinello; VC.

A very common butterfly up to 2500 m., generally sits with wings fully or partially closed on stones or dry leaves, sometimes seen basking in the early mornings. Very slow in flight, it does not fly far when disturbed; quite often sits in the shade.

66. **Dodona durga** (Kollar). Common Punch; LC.

Locally common beyond Yoksum near streams, often basking on rocks with fully opened wings.

67. **Dodona eugenes** (Bates). Tailed Punch; LC.

Locally common between Yoksum and Bakkhim along the streams.

68. **Dodona egeon** (Doubleday). Orange Punch; S.

Two specimens were seen, one at Gangtok

near tourist lodge, on *Eupatorium* bush, the other at Mangan.

69. **Dodona ouida** (Moore). Mixed Punch; S. One male was seen at Gangtok.

70. **Dodona adonira** Hewitson. Striped Punch; S.

One specimen collected from Mangan, another seen by NDM near Bakkhim in May.

71. **Abisara fylla** (Doubleday). Dark Judy; C.

Quite common in W. Sikkim but not seen in N. Sikkim. Occurs between 1400-2200 m usually sitting on the underside of leaves — particularly nettles, with wings partially closed. On an early morning, about 5-6 butterflies were seen at Yoksum basking on the upper surface of *Eupatorium* leaves with wings fully open.

72. **Abisara neophron** (Hewitson). Tailed Judy; S.

One specimen was seen near Manul power station, and another was collected from Nanga bridge, one more specimen was seen in the Orchid Sanctuary, Gangtok.

Fam. LYCAENIDAE

73. **Poritia hewitsoni** Moore. Common Gem; S.

One dead specimen was collected from Sangkalang bridge.

74. **Celastrina** spp. Hedge Blue; C.

Hedge Blues were fairly common up to 2000 m., but it was rather difficult to distinguish any one specifically. One specimen, collected from Tashiding, was identified as *C. puspa*.

75. **Zizeeria knysna lysimon** Moore. Dark Grass Blue; C.

Seen at several places, feeding on buckwheat,

marigold and other Compositae flowers.

76. **Jamides alecto** Fruh. Metallic Cerulean; LC.

Locally common in Sangkalang and Mangan areas but not seen elsewhere; feeding on Compositae flowers and cultivated garden flowers. One butterfly was observed being eaten by a robber fly.

77. **Heliophorus brahma** Moore. Golden Sapphire; S.

Seen only in W. Sikkim around open cultivated areas of Yoksum.

78. **Heliophorus androcles** Moore. Green Sapphire; NC.

Seen above Yoksum up to 2500 m on the way to Bakkhim, in open forest glades, near stream in November and May.

79. **Heliophorus epicles** Fruh. Purple Sapphire; VC.

Seen between 1500-2200 m, feeding on buckwheat, *Cestrum*, *Anaphilas* spp. and marigold flowers.

80. **Narathura** sp. Oakblue; S.

A single specimen was seen in the early morning at Singhik basking on a grassy patch.

81. **Cheritra freja** (Fabricius). Common Imperial; S.

Only one specimen was seen near Manul power station, basking on the broad leaf of a tree 6 m. above the ground.

82. **Catapoecilma elegans** (Druce). Common Tinsel; S.

A very fast flying butterfly, seen basking on rocks below Tashiding in May.

Fam. PAPILIONIDAE

83. **Princeps memnon** Linnaeus. Great Mormon; C.

Often seen on the route from Tarku to

Singtam and from Gangtok to Teesta Bazar, feeding on flowers of poinsettia. Six different forms are known to occur in Sikkim (Talbot, 1939).

84. **Princeps polyctor** Boisduval. Common Peacock; C.

Common in wooded country and open areas up to 1500 m. While driving often seen crossing the road. Feeds on nectar of poinsettia and marigold. A very fast flier, hardly sits on a flower for more than a second.

85. **Princeps paris** Linnaeus. Paris peacock; S.

Seen only twice. One seen at Sangkalang, and the other collected from Geyzing.

86. **Princeps polytes romulus** Cramer. Common Mormon; S.

A single specimen was seen near Sangkalang bridge on the Teesta river.

87. **Princeps helenus** Linnaeus. Red Helen; C.

Common near Singtam, Mangan, Sanklang and on the way from Gangtok to Singtam in forested areas. Found only at lower altitudes up to 1800 m.

88. **Graphium sarpedon** C. P. Felder. Common Blue bottle.

A single specimen seen at Rynghum bridge.

89. **Graphium agamemnon** L. Tailed Jay; S.

One seen flying at Sangkalang, and a dead specimen found at Pashingdang.

Fam. PIERIDAE

90. **Delias aglaia** (Linnaeus). Red-base Jezebel; NC.

One specimen seen feeding on Himalayan cherry flowers at Mangan, and a dead specimen collected from Singhik.

91. *Delias acalis* (Godart). Red-Breast Jezebel.

One specimen was photographed at Tashiding by NDM while in flight, and another was seen on Himalayan cherry flowers in November.

92. *Delias descombesi* Boisduval. Red-spot Jezebel; C.

A fairly common Jezebel around human habitations and open areas; seen feeding on Himalayan cherry flowers, and feeding on Lantana flowers. While we watched a butterfly on a lantana bush it was suddenly grabbed by a praying mantis waiting camouflaged in the bush. We could not wait long enough to watch it feed on the butterfly and hence collected both the specimens, but the mantis escaped on the way.

93. *Delias eucharis* (Drury). Common Jezebel; S.

One specimen seen feeding on Himalayan cherry blossoms at Gangtok.

94. *Appias pandione* (Greyer). Spot puffin; LC.

Locally common at Sangkalang, otherwise seen only occasionally. It was seen up to 3000 m with other whites.

95. *Appias indra* (Moore). Plain Puffin

A single specimen was caught at Sangkalang.

96. *Pieris canidia* (Sparman). Indian Cabbage White; C.

Common, up to 3100 m, seen feeding on *Anaphalis*, *Polygonum* and other flowers.

97. *Pieris brassicae nepalensis* Doubleday. Large Cabbage White; NC.

Seen up to 3100 m, feeding on buckwheat flowers.

98. *Ixias pyrene* (Linnaeus). Yellow Orange Tip; S.

Two specimens seen flying, one near Singtam, the other at Gangtok.

99. *Hebomoia glaucippe* (Linnaeus). Great Orange Tip; S.

A single butterfly seen flying across the road near Singtam.

100. *Eurema sari sodalis* (Moore). Chocolate Grass Yellow; S.

Seen on the way to Bakkhim from Yoksum, feeding on moist earth. Collected two specimens.

101. *Eurema hecabe* (Linnaeus). The Common Yellow; C.

Seen up to 2200 m, mostly in open areas. Near Sangkalang bridge about 50 butterflies were observed feeding on moist earth.

Fam. HESPERIDAE

102. *Coladenia* spp. Pied flat; S.

A single specimen was seen below Tashiding monastery in a fairly wooded patch.

103. *Caprona ransonnetti* (Felder). The Golden Angle; S.

Two specimens were seen, one at Tashiding, the other at Manul.

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